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ABSTRACT

This discussion examines the reading and writing processes of persons with hearing impairments, particularly those leaving school and in transition from school to work. The reading/writing act is viewed from three perspectives: (1) cognitive science or information processing; (2) text organization and its functions; and (3) the processes whereby individuals are socialized to print. The reading/writing process is seen to be highly interactive and heavily dependent upon and reflective of the reader's knowledge level and processing capacities. Text structure and organization including grammar, sentential structures, and textual or discourse structures are briefly considered in relation to learning requirements and subject differences. Finally, reading and writing are thought of as existing within the context of social interactions and the culture at large. Affective aspects of literacy are also briefly reviewed. The research on the literacy skills of hearing-impaired individuals is summarized. Educational implications include the value of a whole language process approach to literacy and of advance organizers such as semantic mapping. (Contains approximately 60 references.) (DB)

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PSYCHOLOGICAL PROCESSES: PROCESSES IN READING AND WRITING

By

Robert E. Kretschmer

Working Paper Prepared for
A Conference: Literacy and the Hearing Impaired

What We Know and Need to Know About Learner Competencies of Hearing Impaired Adolescents and Young Adults

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INTRODUCTION

The last decade or so has seen a considerable resurgence of the interest in literacy - both in how it is established and how it is maintained. A number of professions have contributed to this resurgence of interest and each has contributed to the growing convergence on a common view of this notion. The present paper is an attempt to review some of these notions and to discuss them with reference to hearing impaired individuals, particularly those individuals defined as "school-leavers"1 in transition to the work world.

The approach taken in this paper is similar to that articulated in previous presentations and writings (Kretschmer, 1982; Kretschmer, in press) and is one that emphasizes reading and writing as processes. This orientation also focuses on the fact that the reader/writer is a socialized, or enculturated, information processor of printed text. In other words, this orientation emphasizes the fact that we are dealing with an (pro)active as well as reactive, physical, biological organism who learns, or fails to learn, primarily as a result of: a) his or her direct interactions with the environment and society (culture) and, probably more importantly, b) mediated experiences, as provided by significant others. So, we have an individual who is actively learning the reading/writing act(s) and how to become a speaker/

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1. A term borrowed from R. Conrad (1979) learning the culturally appropriate or sanctioned cognitive/social acts and behaviors associated with each role.

listener, reader/writer, consumer/producer of information.

As a result, the reading/writing act can and needs to be viewed from at least three perspectives: a) cognitive science or information processing, b) text organization and their social functions, and c) the processes whereby individuals are socialized to print. Each of these will be dealt with in turn in this presentation, followed by various concluding remarks and recommendations with regard to pedagogy.

INFORMATION PROCESSING ACCOUNTS OF READING AND WRITING

From the point of view of cognitive science, reading and writing are but two instances of how information is processed and displayed. As a result, it is helpful to understand how these processes work generally, for it is assumed that the more one can understand, describe, and explain how behavior is actually organized, acquired, and used, the better one is in a position to teach that particular skill or behavior, or, at least, to create an environment whereby the individual can display it. With this eventual goal in mind, let us begin.

Prior to describing the actual acts of reading and writing themselves, it is useful to first describe, in brief, contemporary thinking with regard to the organization of memory and how information is processed in general. The reason for this is that current thinking in the area of cognitive science suggests that memory structure is virtually fully equitable with personal

knowledge; and, as a result, the study of memory is to have a window on the structure of knowledge. Additionally, the manner in which this knowledge or information is accessed, used, and added to reflects or may even be equitable with learning.

Current thinking with regard to these matters suggests that information is processed, "receptively", in three stages, though potentially at varying degrees of investment, or depths. These three stages are: the sensory register, short-term memory, and long-term memory. Essentially, at the sensory register stage, raw sensory data impinge upon and are registered with "the system." Although the mechanisms are not fully understood, it is clear that there is an interaction between long- and short-term memory and the sensory register, since, for example in the case of reading, it is well established that the eyes do not simply gloss over print material in a passive manner, but rather are purposefully directed from word to word (McConkie, 1982). In any event, this information is processed extremely quickly and is subsequently passed on to short-term memory, or what has been termed "working memory".

Again, the manner in which this is accomplished is still largely unknown, though it does involve some form of recording or encoding of the raw data into a more usable form - a form that will allow for easy access to and registry with long-term memory. In the case of reading, this typically involves recording the visual image of print into some acoustically phonetic pattern (or internal/inner speech) for most normally hearing individuals. With respect to hearing impaired individuals, this process might involve

any number of possible encoding (recording) systems or combinations of systems, e.g., signs, finger spelling, acoustic phonetics, visual patterns or orthographic rules. The function of short-term memory is to serve as a "buffer" so as to afford an opportunity for the (re)codification of information of raw sensory data in any number of representational forms so that the information can be dealt with and incorporated into long-term memory. As might be expected, information can only be held in short-term for brief periods of time without recourse to some form of overt rehearsal strategy or pacing strategy. At this point, the processed and recorded information in short-term memory interacts with and is passed on to long-term memory and comprehension begins. "Supervising" all of these activities is an executive, metacognitive component (or function) which serves to: a) govern and monitor "online" processing, storage, retrieval, production, and maintenance of information and b) reflectivity (see Kretschmer, 1984 for a review of some of this material and a discussion of certain pedagogical considerations with regard to various metacognitive and metalinguistic issues as they apply to the teaching of hearing impaired individuals). Clearly, the use of some overt rehearsal strategy in dealing with information within short-term memory represents the application of this executive function and reflects what is referred to as "top-down processing" (as does the act of sending one's eyes to specific points while reading as discussed above).

The organization of long-term memory is very complex and, as

indicated above, is generally regarded as being equitable with personal knowledge. Although a complete understanding of long-term memory and, thus, the structure of personal knowledge has not been achieved, it traditionally is divided into two parts - episodic and semantic memory - and it is thought to have multiple representations (e.g., imagery, perceptual experiences, schemes, conceptual networks, metaphors and abstract propositions). Episodic memory, in essence, is stored "personal experiences and their temporal relations" (Tulving, 1972). It is acquired for the most part through direct exposure to various stimuli, events, and behavioral models. Semantic memory, alternatively is thought to be comprised of: a) propositional or declarative knowledge, which basically is a rich lattice of interconnecting concepts, semantic relationships, principles and/or nodes, and subschemes that are adequately and clearly defined, appropriately and richly interconnected, and are mutually agreed upon by a "speech language community" and b) certain aspects of procedural knowledge, or knowledge of how to do some activity or how to get things done. Unlike episodic memory, both types of semantic knowledge are typically acquired via some mediational process. While episodic and semantic knowledge have been discussed in categorical terms, it should be noted that there is clearly overlap and interaction of these knowledge bases, as evidenced, for example in one's belief and value systems.

As can be surmised, the above description of semantic memory is tantamount to ascribing to a weak Whorphian hypothesis (e.g., Schlesinger, 1977) which posits: a) that knowledge is relative and

a function of the knower (and, thus, may vary across individuals, age levels, and across cultures); b) that language, while not determining thought per se, plays a major role in shaping, clarifying, and drawing in the boundaries of various notions and concepts; and c) that this knowledge is acquired via an elaborate mediated, interfactional, enculturation process.

As can be seen, the above description portrays information processing as being an extremely dynamic interactional process rather than a passive one as suggested by behavioral and traditional cognitive approaches.

For normally hearing adults, the reading act seems to go something like the following: The reader, for whatever reason, intentionally and purposefully decides to engage in the reading act. This motivation for reading may have been generated previously in some other social-psychological-environmental context, or may arise out of the immediate social context, e.g., picking up a magazine while in a doctor's waiting room.

Additionally, depending upon one's motivation for reading and the social context, the individual may decide, to some extent a priori, upon the degree to which he or she will invest in the act and the depths to which the text will be processed. Once these, often instantaneous, decisions have been made, certain expectations and schemes (including general world and personal knowledge) are activated based upon prior knowledge or as the result of various environmental cues (e.g., the jacket cover, the title of the text, the art work, the format of the text, the placement of the text on

the page, etc.) Then, the individual sets about the actual act of reading. In accomplishing this act, the reader sends his eyes from word to word in a left to right fashion (at least with respect to English), in part, as a result of some complex procedure involving the application of an individual's knowledge of semantics, syntax, text organization, and certain physical aspects of the visual stimulus, e.g., the spaces before and after individual words. Although it is not known exactly how it is that long-term, or for that matter short-term, memory interacts with the sensory register, it is clear that they do, as noted before.

As information is passed into short-term memory, the information is recorded or encoded into a form that is more usable and compatible with how information is stored in long-term memory. At this point lexical items, syntactic structures, and discourse structures are interpreted and are assigned specific meanings (i.e., are instantiated. For example, in the sentence. The boy earned a merit badge the lexical item boy would be assigned the meaning of boy scout based upon the additional associative information obtained from the phrase merit badge).

At this point, various inferences may be made, based upon linguistic/textual knowledge, prior knowledge, world knowledge, and knowledge derived from the text; certain anticipatory expectations may be confirmed or disconfirmed; and new ones may be set. Additionally, the individual's belief systems are activated and (s)he makes some decision, consciously or unconsciously, as to the degree to which (s)he will become self involved in the text. Once

information is processed within short-term memory, it is then passed on to long-term memory where it is stored in specific subschemes, one of which is a constantly updated working model of the current text being read. Other related schemes and subschemes are activated, and this information is assimilated/ accommodated to one's general knowledge, if it is new. Throughout this process, the executive function is manipulating, tracking, and integrating multiple sources of information; determining the depth of processing; monitoring comprehension; adopting different perspectives; and selecting those aspects of the text to which particular attention must be paid.

If all goes well, the act goes forward flawlessly, but such is rarely the case. Individuals often misread and make misinterpretations of text. Good readers recognize that they have erred and will hesitate and engage in repair strategies such as rereading, etc. Poor readers, alternatively, often do not correct themselves and fail to activate, alter, or develop schemata properly as they read. These abilities seem to be related to cognitive style in that those who demonstrate field independence and reflectivity are better able to comprehend both familiar and unfamiliar text than are field dependent, impulsive individuals. This may be due to the former group's overall better metacognitive controls over their own cognitive processes (Egeland, 1974; Pitts & Thompson, 1984).

In essence, then, the reader/consumer of information is working hard to recognize the writer's plans and, thus, is a very

active, responsible constructor of meaning, rather being a simple passive decoder of meaning.

With regard to writing, the process seems to go as follows: The individual, for whatever reason, has a felt need to communicate and, with respect to writing, (s)he intentionally chooses to do so via this medium, or else the situation, itself, dictates the use of this modality/medium. In doing so, (s)he decides that the material should serve some function which eventually must reflect the fulfillment of certain preconditions and assumptions in order to be a successful communicating piece of text. Depending upon the circumstances, the functions of the material to be written may be classified as interactional or poetic in nature (Kretschmer, in press) and the actual communication with the intended reader may be immediate (as in TDD talk) or delayed (e.g., electronic bulletin boards, books, articles, and newspapers). In any event, the act should be considered intentional, purposeful, functional, and as involving topic choice and an awareness of different communication functions and forms of writing. Once the topic and general form are chosen, a period of rehearsal or preplanning ensues, which may be quite extensive and may require sophisticated information gathering techniques and study skills, as in the example of academic writing. It also involves selecting and deciding upon the specific aspects of the intended meanings to be expressed and the manner in which they will be expressed, following something similar to Grice's (1975) maxims of conversations.

At this point, actual drafting begins; this involves select-

ing, structuring, and ordering explicit language forms so as to signal the intended meanings to the fullest extent possible and to assist the reader in tracking the information. In accomplishing this task, the writer is required to adopt a particular frame of reference (or thematic focus) and to hold, manipulate, distinguish, and reference multiple sources of information. Upon completion of, or while actually drafting, the text, the material is (re)read, silently or aloud, and reconsidered so as to monitor the meaning of the document in terms of clarity, completeness, cohesion, coherence, and appropriateness, after which the text is altered (edited) accordingly. Editing also occurs in order to take into account newly discovered notions or meanings generated as a result of the writing process itself. Editing usually begins first with issues having to do with meaning representation, followed by grammatical congruence, and, finally, spelling/punctuation correctness, though this is not to be considered an invariant three-step process or model. This drafting/editing process continues until the message is understood, or there is a feeling, rightly or wrongly, that the text is complete, comprehensible, and reflective of the writer's intent, sometimes determined in consultation with others. Thus, writing involves the interaction between the writer's tacit knowledge or conceptual schemes stored in long-term memory and the writer's strategies for translating information into text (Kretschmer, in press) in order to communicate with others or for self edification.

These plans and productions are typically constrained, how-

ever, by the writer's assessment of the intended reader's beliefs, knowledge base, and ability to understand the forms used and their intent. The act of writing/producing information successfully and competently is not just the "one way giving" of information, but as in the case of asserting it involves taking the listener's perspective and building a model of the reader's beliefs and abilities. Having done so, the writer, then, constructs an utterance that invites the reader to share a set of beliefs with him or her (Allen, 1983).

As can be seen, the above, somewhat over-simplified, descriptions of reading/writing and information processing, are very different from those traditionally portrayed. The picture presented is one where the reading and writing acts are highly interactional, mediated, and flawed processes that are heavily dependent upon and reflective of one's current state of knowledge and processing capacities at any given point in time. This is in opposition to the traditional, somewhat mythical, perspective which views reading as:

a) a passive decoding phenomenon wherein comprehension is built-up based upon the additive meanings of individual lexical items;

b) a situation wherein the passage is considered a self complete piece of text not requiring on going knowledge updating;

c) a situation wherein the reader comes naively to the print and where meaning and information are extracted from the text;

d) the application of various discrete but hierarchically organized skills and subskills;

e) a situation wherein the eyes passed over the printed page in an evenly paced manner while maintaining a large eye

span;

f) a single fluent, non-faltering, phenomenon requiring no backtracking, not unlike a news broadcaster reading a script;

g) a subject to be taught during specific times, restricted largely to basal readers and the pleasure reading of literature, and emphasizing decoding skills and the total comprehension of the text, including the recognition and identification of minutia and details;

and, writing as:

a) an effortless linear process reflecting a stream of consciousness which can be produced swiftly and on demand;

b) talk put down on paper;

c) a silent solitary act;

d) going from thought to print;

e) a means of communicating only that which is already known;

f) a sequence of sentences each of equal weight with regard to their contributions to the meaning and organization of the text;

g) a unitary process;

h) a skill that is learned in an atomistic fashion and that is product-oriented.

GRAMMAR, SENTENTIAL STRUCTURES, AND TEXT STRUCTURES

Thus far, particular attention has been paid to the role of long-term memory in the reading/writing process. At this point it would be helpful to explore this notion in more depth.

The whole notion of long-term memory, at least with regard to language and text production/comprehension, rests with the notion of schema and schema theory. Schemes exist at a number of levels.

They exist at the lexical level (e.g., John killed Fred with a knife, which means that John caused Fred to become not alive by some means and in this case by means of a knife), at the sentential level (e.g., He ate at the diner. which entails that he ate something at the diner), the intersentential level (e.g., I walked into the room. The dinner setting was beautiful where it is known that the dinner setting was in the room), and at textual or discourse level.

Thus, grammar itself can be thought of a as form of scheme. Until recently the approach taken in the U.S., particularly in the area of the education of the hearing impaired with regard to linguistic descriptions, has focused primarily on the generative syntactic model proposed by Chomsky and to some extent the generative semantic approaches as outlined by Chafe (1970), Fillmore (1968), and Antinucci and Parisi (1976). While still important in explicating how phrase units are organized, how various sentences (proposition) relate to one another, and the internal semantic structure of sentences to some extent, these approaches are still sententially based and they do not typically address the semantic or pragmatic value of the grammatical structures themselves. An alternative, yet complementary, approach, is offered by the functionalist school which attempts to define the purposes of various syntactic devices (e.g., Levison, 1983; Halliday, 1985; Prince, 1985; Quirk, Greenbaum, Leech & Svartvik, 1970) and the mechanisms by which text cohesion is achieved (Halliday and Hasan, 1976). This approach could be used to bridge the gap between

stylistics and grammar, more specifically:

a) how grammar can be exploited for certain effects

b) how certain grammatical structures are probably associated with certain textual types

Indeed, the present author would argue that certain texts and subject domains provide excellent opportunities to teach certain linguistic structures. For example, social studies tends to make heavy use of adverbials, particularly of time and place, truncated passives, and the present indicative, indicating habituality or a generality. Likewise, science texts make heavy use of the present indicative, while the setting portion of narratives makes heavy use of statives, as do certain kinds of reports (those emphasizing attributes). Other examples are the pronoun usages that signal the relationship between the author and his material or content and the use of adverbial adjuncts, which express various attitudes, judgments, and evaluations of statements, e.g., honestly, actually, surely, etc. In this regard, Biber and Finegan (1988) reported that eight clusters of adverbial adjuncts of stance could be identified which distributed themselves according to certain types of text.

As might be expected, these functional approaches in combination with generative model, other aspects of pragmatic theory and notions of text cohesion, e.g., the devices use to control the relationship between old and new information (the given-new contract) offer a fuller understanding of the organization of the English language.

At the textual level, there are a number of forms with which youngsters will need to be familiar, since not all textual forms are organized similarly. Additionally, it should be recognized that they do not entail the same themes, are not equally accessible to all readers (Spyridakis & Standal, 1987), are not equally as easy to process and recall (Ohlhausen & Roller, 1988), do not develop within children at an equal rate (Langer, 1985), and should not be confused with content or world knowledge schemes, since each makes its own contribution to comprehension (Ohlhausen & Roller, 1988). Within any text type, however, there are similarities. Kretschmer (in press) (based upon the work of Britton, Burgess, Martin, McLeon & Rosen, 1975; Kinneany 1971; Meyer and Freedle 1984; and Richgels, McGee, Lomax, and Sheard, 1987) provides a partial taxonomy of test types and genres. It is well known, though not fully researched, that each genre is organized and stylistically different.

CULTURE AND SOCIAL ASPECTS OF READING AND WRITING

The acts of reading and writing in the natural environment, as suggested above, do not simply exist within their own right. Rather, they exist within the context of social interactions and the culture at large. Within these social interactions, the acts of reading and writing may either be the central focus (e.g., negotiating the meaning or function of a piece of text) or they may simply serve as an ingredient of a social interaction. To some extent, the latter has been addressed previously in this manu-

script, in that it has been noted that printed texts serve various functions and are regarded and valued accordingly. With regard to the former, the matter can be viewed either from the perspective of the individual (i.e., a social psychological perspective) or from the perspective of the acts themselves (i.e., sociological/ anthropological perspective). Clearly, the two perspectives are not mutually exclusive, since the former assumes knowledge of the latter, and the latter subsumes the former. From the social psychological perspective, the issues have to do with the individual's socio-linguistic competency with respect to print, how it (print) differs from face-to-face communication, and the individual's metalin-guistic/metacognitive knowledge as to the processing and production of textual material. As for the sociological/anthropological perspective, the issues have to do with how literacy is defined, introduced, manifested, utilized, organized, and valued within the culture. It also deals with the issue of how literacy is associated with, reflective of, and determined by various formal and informal cultural institutions.

LANGUAGE, THOUGHT, AND AFFECT

Although primary attention in this paper has been directed at the cognitive and social aspects of literacy, the affective domain cannot be ignored. Just as it has been suggested that a significant relationship exists between thought and language, it is suggested that a significant relationship exists between these two notions and affect (Kretschmer, in press). Cognitive accounts of

affect suggest that emotional reactions and their physiological manifestations are just that - reactions to automatic propositional thinking (Beck, Rush, Shaw & Emory, 1979) and that the relationship between cognition, affect, and language is often considered within the context of certain hypothesized constructs known as cognitive styles (such as reflectivity/impulsivity, field dependency/ independency, learned helplessness, and internal/external locus of control). The type of cognitive style (affective trait) acquired is believed to be the result of various positive (facilitative) or negative (non-facilitative) interactional patterns between the child and significant others.

Feuerstein (1979) has termed these interactions as mediated learning. Positive, or facilitative, mediated experiences are those in which significant others actively and intentionally assist the child in the learning process by framing, filtering, prodding, and focusing the child so as to make comprehension and production more organized, precise, and situationally appropriate and which assist the child in transcending the here-and-now. When appropriate mediational experiences are not afforded the child, he or she may develop certain cognitive and metacognitive deficits, resulting negative affective responses, and an impoverished knowledge base which directly and indirectly can affect the individual's acquisition of literacy skills (for more information see Feuerstein, 1979; Keane and Kretschmer, 1987; Kretschmer, in press, and Martin, this volume). From an anthropological perspective, this represents a breakdown in the intergenerational

transmission of information (Feuerstein, 1979) or, in other words, a failure on the part of significant others, usually the caretakers, to orient the child adequately and appropriately to the significant features of the culture. In addition to having essentially intact cognitive functioning and presumably normal language abilities, the successful reader must have sufficient confidence to take risks and must demonstrate audience and personal awareness, the latter two of which seems to be related to the ability to anticipate others' thoughts and reactions (Kroll, 1983). Additionally, according to Williams (1985), the writer must be able to decontextualize language sufficiently to produce readable text which may be an expression of and be related to a field-independent cognitive style.

LITERACY SKILLS OF HEARING IMPAIRED INDIVIDUALS

The fact that many hearing impaired individuals have reading and writing skills in English far below their normally hearing peers is a well established fact. In the past, it has been said that these low achievement levels were related to difficulties in understanding and producing English syntax and a reduced vocabulary. While this undoubtedly is true, in part, other difficulties have also been noted. The semantic memory of deaf individuals not only has been characterized as having missing nodes (reflective of a reduced vocabulary) but also those nodes that they do possess are often less accurately defined and are based on associations rather than on semantic criterial features (Kretschmer, 1982; Strassman,

Kretschmer, & Bilsky, 1987). In addition, there often are insufficient associative, connotative, hierarchical, and grammatical links among the nodes. Other difficulties that have been noted with hearing impaired individuals are: spontaneously instantiating particular meanings for general terms (Strassman, Kretschmer, & Bilsky, 1987); making certain types of inferences (Wilson, 1979); understanding and producing cohesion ties (Berchin and Kretschmer, in preparation; Yoshinaga-Itano & Snyder, 1985), understanding figurative language (King & Quigley, 1985 for a review); and making use of contexts (see Kretschmer, 1982 for a summary; Wilbur, 1977). On the positive side, Gaines, Mandler, and Bryant (1981) found little difference between orally taught deaf adolescent children who were very good readers and their normally hearing peers in terms of overall recall of text structures, Likewise, Gormley (1981, 1982) and Yurkowski and Ewoldt (1986) found that deaf children, like their normal hearing peers, make use of their prior knowledge in processing familiar and unfamiliar text. There is also evidence that young elementary aged hearing impaired children engage in reading and writing processes that are very similar to those of normally hearing individuals, at least in a general way (Ewoldt 1981, 1985). Other research, however, has noted that hearing impaired children often produce more poorly organized test (Yoshinaga-Itano & Downey, 1986) and it has been suggested that the non-reflective approach to task solutions may be linked to certain parent-child interactions and pedagogical practices (Quigley & Kretschmer, 1982; Keane & Kretschmer 1987; Kretschmer & Quigley,

1988; Mogford, Gregory, & Keay, 1978). Despite the fact that a great many hearing impaired individuals have poor English literacy skills, it has been noted that they deal with print on a daily basis. Blatt and Sulzer (1981), for example, found 80% of their adult deaf subjects read the newspaper daily and that a great many watched captioned television. Similarly, McLaughlin and Andrews (1975) found that hearing impaired adults read various forms of print, including books (particularly those which eventually had been made into movies). Presumably, they write as well, but to date little data is available as to the types of writing tasks they naturally engage in or how effective they are in producing and communicating in this mode.

EDUCATIONAL IMPLICATION

Based upon the information provided above, a number of possible education recommendations or implications are suggested.

Although a complete rendering of these educational implications is not possible, the following is a sample of a few of them.

First, since the evidence suggests that the acts of reading and writing are inextricably related, interactive processes that are facilitated by prior topic knowledge, a whole language, process approach to literacy which stresses the functions of text and the reading/writing connection would seem reasonable. Such an approach is process oriented and developmental in nature. Although skill development is not ignored, it is not approached as a hierarchy of discrete skills culminating in comprehension.

Rather, the approach emphasizes meaning and comprehension within normalized contexts from the very beginning. The approach also deemphasizes the use of basal texts. Alternatively, emphasis is put upon text forms that exist within the natural environment and children's literature. The teaching of literacy should not be restricted, however, to the use of basal readers, literature, or specific times of the day. Rather, literacy teaching should involve all forms of text and should be introduced and dealt with across the curriculum.

In approaching these materials (whether one uses naturally occurring text forms as suggested above or basal texts), the above mentioned information suggests that students be provided with advanced organizers, including semantic mapping, which would a) orient the youngsters to the task, the task's demands, and the skills needed to complete the task; and b) take into account the student's background knowledge and knowledge of textual forms. In those cases, where there is insufficient background knowledge, either the task should be abandoned in favor of another activity or the necessary background information should be provided. Additionally, emphasis should be put on assisting the child in: a) identifying and tracking central themes (e.g., story grammars or plots) and multiple strands of information (using techniques suggested by Omanson, 1982); b) identifying, comparing, contrasting, and producing various genres and/or themes; c) making inferences based upon contextual cues and prior knowledge; d) identifying the functions or intent of various textual forms; and e) developing

various strategies to assist in information management and retention, including note taking, producing summaries and/or paraphrases of information, etc.. With older youngsters efforts at direct instruction, as has been tried with hearing individuals, might be profitable e.g., identifying typographical cues such as headlines, etc. (Taylor, 1982); identifying expository text structures and summarization (Armbruster, Anderson, & Ostertag, 1987), identifying narrative structures (Fitzgerald & Spiegel, 1983); using certain cognitive skills or acts (Duffy, et al., 1987); main idea comprehension (Bauman, 1984); anaphoric relations (Bauman, 1986); and certain writing skills (Taylor & Beach, 1984). Kretschmer (1984) cautions, however, that direct instruction presumes a certain level of metacognitive awareness and development which must be taken into account.

When approaching the issue of identifying or encoding various functions in textual forms, consideration needs to be given to highlighting those features (e.g., felicitous conditions) which serve to define those functions. For example, in the case of persuasive writing the individual needs to take into account the following features:

a) the author thinks that the reader should think X

b) the author knows that the reader doesn't want to think X

c) the author thinks (s)he knows why the reader doesn't think X

d) the author thinks (s)he can say things that will cause the reader to think about it in a different way

e) the author wants to say why (s)he thinks that the reader should think

f) the author says [...]

g) the author says this in this way because (s)he wants to cause the reader to come to think that the reader should think that X, and think that X (Wierzbicka, 1987)

Clearly, in doing this, the manner in which these points are organized or must be inferred from/implied within the text will need to be highlighted for the students. This will need to be done as a part of, or possibly above and beyond, the actual arguments or points being made themselves. In doing so, one must also take into account the actual grammatical, cohesion, and textual devices used and their functions in signaling these various intents and meanings. This approach not only addresses the conceptual underpinnings of the functions of texts, but it implicitly takes into account certain aspects of persona awareness and may assist in developing a notion of perspective taking.

The above is but one example. Similar analyses are available for other textual functions expressed as speech acts or speech acts verbs (Wierbicka, 1987). In addressing these issues, the pedagogy should make use of, as stated before, real or, at least, simulated situations where these behaviors can be modeled, elicited, and enacted.

One area which was not sufficiently developed in this presentation, but which needs to be mentioned briefly is the notion of

metaphors and figurative language. In recent years, a number of interesting investigations have been conducted in this area. One notable investigation was that conducted by Lakeoff and Johnson (1980), the premise of which was that a number of idiomatic expressions were actually based upon various orientational, structural, or ontological metaphors that provide insights into the culture's value systems and conceptual organization of the world. For example, in our culture and language time is often used metaphorically like money; hence the phrase "time is money." As a result, each can be wasted, spent, lost, saved, etc..

In this presentation, I have tried to show that the reading and writing processes are very complex psychological and social phenomenon which are amenable to instruction and learning. It is the contention of this author, however, that instruction, in order to be effective, must be provided by a teacher who is conversant with contemporary theories of how these processes actually develop and work and how to translate these notions into practice.

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